Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A composition comprising a pharmaceutically acceptable particle and a stable HIV-1 pre-fusion envelope glycoprotein trimeric complex operably affixed thereto, each monomeric unit of the complex comprising a modified form of a gp120 of a HIV-1 isolate ~~HIV-1 gp120~~ and a modified form of an ectodomain of gp41 of such HIV-1 isolate ~~HIV-1 gp41~~, wherein ~~(i)~~ the modified gp120 and the modified gp41 ectodomain are bound to each other by at least one intermolecular disulfide bond between a cysteine residue introduced into the modified gp120 and a cysteine residue introduced into the modified gp41 ectodomain, which stabilizes the otherwise non-covalent gp120-gp41 ectodomain interaction. ~~and (ii) the gp120 has deleted from it at least one V-loop present in wild-type HIV-1 gp120~~.

2. (Original) The composition of claim 1, wherein the stable HIV-1 pre-fusion envelope glycoprotein trimeric complex is operably affixed to the particle via an agent which is operably affixed to the particle.

3. (Original) The composition of claim 1, further comprising a pharmaceutically acceptable carrier.

4. (Original) The composition of claim 1, further comprising an adjuvant.

5. (Currently Amended) The composition of claim 74 ~~1~~, wherein the modified gp120 has deleted from it one or more of variable loops V1, V2 and V3.

6. (Original) The composition of claim 1, wherein the disulfide bond is formed between a cysteine residue introduced by an A492C mutation in gp120 and a cysteine residue introduced by a T596C mutation in gp41.

7. (Original) The composition of claim 1, wherein the gp120 is further characterized by (i) the absence of one or more canonical glycosylation sites present in wild-type HIV-1 gp120, and/or (ii) the presence of one or more canonical glycosylation sites absent in wild-type HIV-1 gp120.

8. (Original) The composition of claim 1, wherein the particle is selected from the group consisting of a paramagnetic bead, a non-paramagnetic bead, a liposome and any combination thereof.

9. (Original) The composition of claim 1, wherein the particle comprises PLG, latex, polystyrene, polymethyl-methacrylate, or any combination thereof.

10. (Original) The composition of claim 1, wherein the mean diameter of the particle is from about 10nm to 100μm.

11. (Original) The composition of claim 10, wherein the mean diameter of the particle is from about 100nm to 10μm.

12. (Original) The composition of claim 10, wherein the mean diameter of the particle is from about 100nm to 1μm.

13. (Original) The composition of claim 10, wherein the mean diameter of the particle is from about 1μm to 10μm.

14. (Original) The composition of claim 10, wherein the mean diameter of the particle is from about 10μm to 100μm.

15. (Original) The composition of claim 1, wherein the mean diameter of the particle is from about 10nm to 100nm.

16. (Original) The composition of claim 1, wherein the mean diameter of the particle is about 50nm.

17. (Original) The composition of claim 2, wherein the agent is selected from the group consisting of an antibody, a fusion protein, streptavidin, avidin, a lectin, and a receptor.

18. (Original) The composition of claim 2, wherein the agent is CD4.

19. (Original) The composition of claim 17, wherein the agent is an antibody.

20. (Original) The composition of claim 4, wherein the adjuvant is selected from the group consisting of alum, Freund's incomplete adjuvant, saponin, Quil A, QS-21, Ribi Detox, monophosphoryl lipid A, a CpG oligonucleotide, CRL-1005, L-121, and any combination thereof.

21. (Original) The composition of claim 3, further comprising a cytokine and/or a chemokine.

22. (Original) The composition of claim 21, wherein the cytokine is selected from the group consisting of interleukin-2, interleukin-4, interleukin-5, interleukin-12, interleukin-15, interleukin-18, GM-CSF, and any combination thereof.

23. (Original) The composition of claim 21, wherein the chemokine is selected from the group consisting of SLC, ELC, Mip3α, Mip3β, IP-10, MIG, and any combination thereof.

24. (Original) A method for eliciting an immune response in a subject against HIV-1 or an HIV-1-infected cell comprising administering to the subject a prophylactically or therapeutically effective amount of the composition of claim 1.

25-27. (Canceled)

28. (Original) A vaccine which comprises a therapeutically effective amount of the composition of claim 1 and a pharmaceutically acceptable carrier.

29. (Original) A vaccine which comprises a prophylactically effective amount of the composition of claim 1 and a pharmaceutically acceptable carrier.

30. (Original) A method for preventing a subject from becoming infected with HIV-1 comprising administering to the subject a prophylactically effective amount of the composition of claim 1, thereby preventing the subject from becoming infected with HIV-1.

31. (Original) A method for reducing the likelihood of a subject's becoming infected with HIV-1 comprising administering to the subject a prophylactically effective amount of the composition of claim 1, thereby reducing the likelihood of the subject's becoming infected with HIV-1.

32-33. (Canceled)

34. (Original) A method for producing the composition of claim 1, comprising contacting a pharmaceutically acceptable particle with a stable HIV-1 pre-fusion envelope glycoprotein trimeric complex under conditions permitting the complex to become operably affixed to the particle, wherein each monomeric unit of the complex comprises HIV-1 gp120 and HIV-1 gp41, (i) the gp120 and gp41 being bound to each other by at least one disulfide bond between a cysteine residue introduced into the gp120 and a cysteine residue introduced into the gp41, and (ii) the gp120 having deleted from it at least one V-loop present in wild-type HIV-1 gp120.

35-73. (Canceled)

74. (New) The composition of claim 1, wherein the modified gp120 has deleted from it at least one V-loop present in wild-type HIV-1 gp120.

75. (New) The composition of claim 1, wherein the HIV-1 isolate represents a subtype selected from the group consisting of clades A, B, C, D, E, F, G, H, and O.

76. (New) The composition of claim 75, wherein the HIV-1 isolate is a B subtype.

77. (New) The composition of claim 76, wherein the HIV-1 isolate is HIV-1_{JR-FL}, HIV-1_{DH123}, HIV-1_{GUN-1}, HIV-$1_{89.6}$, or HIV-1_{HXB2}.

78. (New) A composition comprising a pharmaceutically acceptable particle and a stable HIV-1 pre-fusion envelope glycoprotein trimeric complex operably affixed thereto, each monomeric unit of the complex having the amino acid sequence set forth in any of SEQ ID NOs:18, 20 or 22.

79. (New) The composition of claim 78 having the amino acid sequence set forth in SEQ ID NO:20.